

REMARKS

The following claims are pending in the application: 1 – 25 and 27 - 29

The following claims have been amended: 1, 7, 11, 15, 21, and 29

The following claims have been deleted: 5 and 6

The following claims have been added:

As a result of the foregoing Amendment, the following claims remain pending in the application: 1 – 4, 7- 25, and 27 – 29.

Correction to “absorbing”

Applicants have corrected the spelling of “adsorption” having incorrectly spelled the term “absorption”.

The Rejection Under 35 U.S.C. §102(b)

The Examiner has rejected claims 1 – 5, 8 – 25, and 27 – 29 under 35 U.S.C. §102(b) as being anticipated by DeCastro et al. (US Pat. No. 5,841,021).

Applicants have amended independent claims 1, 11, 15, 21, and 29 to include the limitation that the sensing material comprises a majority of cuprous chloride (as previously recited in claim 6). Accordingly, Applicants respectfully submit that the outstanding rejection may be properly withdrawn

The Rejection Under 35 U.S.C. §103(a)

The Examiner has rejected claims 6 and 7 under 35 U.S.C. §103(a) as being unpatentable over DeCastro et al. ('021) in view of Tamaki et al. (U.S. Pat. No. 6,311,545).

Applicants again note that the Examiner has taken the position that DeCastro fails to disclose that the sensing material is cuprous chloride. Applicants respectfully submit that the Examiner's outstanding rejection may be properly withdrawn as Tamaki et al. fails to teach a sensing material comprising cuprous chloride. In fact, the Examiner's reliance on the Tamaki reference remains unclear to the Applicants.

Applicants respectfully submit that the copper chloride disclosed by Tamaki is actually CuCl_2 , and not CuCl as printed. Applicants respectfully direct the Examiner's attention to column 8, lines 3 – 5 where Tamaki discloses that the sensor is dipped in a mixed solution of 0.05 mol/L aqueous CuCl solution and 1 mol/L aqueous $\text{CH}_3\text{CO}_2\text{NH}_4$ solution to impart the sensor with 5% by weight of CuO (a sensitizer).

Tamaki is inoperable for teaching a mixed solution comprising 0.05 mol/liter aqueous CuCl solution, as the solubility of CuCl is far too low (0.0062 grams per 100 cc) to achieve that concentration. The CRC Handbook of Chemistry and Physics, 70th Edition gives the solubility of CuCl in water on page B-88 as 0.0062 grams per 100cc. At this solubility, a saturated aqueous solution of CuCl would have a concentration of 0.0006263 mol/liter, which is approximately 80 times more dilute than the 0.05 mol/liter CuCl solution disclosed by Tamaki. Accordingly, Applicants respectfully submit that the Tamaki reference contains a typographical error as printed, which renders its teaching of a mixed solution comprising a solution of 0.05 mol/liter aqueous CuCl inoperable.

Applicants have attached herewith a Declaration of Richard L. McCreery under 37 C.F.R. 1.132, in support of the inoperability of Tamaki's mixed solution teaching.

For the sake of argument, however, even if Tamaki did in fact disclose a mixed solution comprising CuCl, Tamaki fails to teach or even suggest a CuCl sensing material. Rather, Tamaki teaches and only teaches that when a sensor device is dipped in a mixed solution comprising a copper chloride solution and an ammonium acetate solution, that CuO is deposited. Tamaki does not teach nor suggest that a CuCl film is deposited. At best, Tamaki appears to teach that an anhydrous zinc antimony semiconductor can be made more sensitive to gases by depositing copper oxide thereon – and discloses a preferred methodology for doing so. Accordingly, Tamaki cannot fairly be said to cure the deficiencies of the DeCastro reference – namely, that the sensing material is cuprous chloride – therefore, Applicants respectfully submit that the Examiner's outstanding rejection may be properly withdrawn.

CONCLUSION

In view of the foregoing amendment and accompanying remarks, the Applicants respectfully submit that the present application is properly in condition for allowance and may be passed to issuance upon payment of the appropriate fees.

Telephone inquiry to the undersigned in order to clarify or otherwise expedite prosecution of the subject application is respectfully encouraged.

Respectfully submitted,

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Date: 1-28-04

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